

WE CLAIM:

1. A receptor polypeptide, or functional fragments thereof, wherein said polypeptide is characterized by:

forming a heterodimer with retinoid X receptor (RXR),

5 binding to a direct or inverted repeat response element motif based on the half site AGTTCA,

activating transcription through response elements found in steroid inducible P450 genes in response to a wide variety of natural and synthetic steroid hormones, and

10 being prominently expressed in the liver and the intestine.

2. A polypeptide according to Claim 1 wherein said polypeptide is further characterized by having a DNA binding domain of about 67 amino acids with 9 Cys residues, wherein said DNA binding domain has about 73 % amino acid identity with the DNA binding domain of the *Xenopus* benzoate X receptor.

15 3. A polypeptide according to Claim 2 wherein said polypeptide is further characterized by having a ligand binding domain of about 198 amino acids, wherein said ligand binding domain has about 52 % amino acid identity with the ligand binding domain of the *Xenopus* benzoate X receptor.

20 4. A polypeptide according to Claim 1, wherein said polypeptide has substantially the same amino acid sequence as shown in SEQ ID NO:2.

5. A polypeptide according to Claim 1, wherein said polypeptide has the same amino acid sequence as shown in SEQ ID NO:2.

6. A transgenic animal expressing polypeptide according to claim 1.

7. Isolated nucleic acid which encodes a polypeptide according to Claim 1.

*Sub-a2*

*Sub-A3* > 8. A transgenic animal transformed with nucleic acid according to claim 7.

9. An isolated nucleic acid construct comprising:

(i) the nucleic acid of Claim 7 operatively linked to

(ii) regulatory element(s) operative for transcription of said nucleic

acid sequence and expression of said polypeptide in an animal cell in culture.

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10. A non-human transgenic animal transformed with a nucleic acid construct

according to Claim 9.

*Sub-A4* > N. A transgenic animal according to Claim 10, wherein said animal is further transformed with a reporter vector which comprises:

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(a) a promoter that is operable in said cell,

(b) a hormone response element, and

(c) DNA encoding a reporter protein,

wherein said reporter protein-encoding DNA is operatively linked to said promoter for transcription of said DNA, and

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wherein said promoter is operatively linked to said hormone response element for activation thereof.

*Sub-A5* > 12. A non-human transgenic animal which express substantially no steroid or xenobiotic receptor.

Add B

Add A

DETAILED DESCRIPTION